MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2017 / 2018 SESSION

DCS5128 – SYSTEM ANALYSIS AND DESIGN

(Diploma Students Only)

30 MAY 2018
2.30 p.m. – 4.30 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **10** pages with **3** sections.
2. Attempt all questions in **Section A**, **B** and **C**.
3. Answers for **Section A** and **B** should be shaded on the **OMR** sheet provided.
4. For **Section C**, please write your answers in the **Answer Booklet** provided.

SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS)

Answers for this section should be shaded on the OMR sheet provided.

1. _____ were developed to make the system developers' tasks getting easier and consistent.

   A. System Service Request documents
   B. Computer-aided software engineering (CASE) tools
   C. Data flow diagrams
   D. Cost-benefit analysis techniques

2. Which of the following is a traditional methodology used to develop, maintain and replace information systems?

   A. Prototyping
   B. OOAD
   C. Agile
   D. Waterfall SDLC

3. Which of the following is **CORRECT** with respect to the logical design?

   A. All functional features of the system chosen for development in analysis are described independently of any computer platform.
   B. Logical design does not concentrate on the business aspects of the system.
   C. Logical design is tied to a specific hardware and software platform.
   D. Technical specifications are developed.

4. Which of the following **BEST** describe the below statement?

   "The practice of turning over responsibility of some or all of an organization's information systems applications and operations to an outside firm"

   A. Cloud computing
   B. In-house development
   C. Outsourcing
   D. Packaged software

Continued...

5. Cloud computing is the provision of computing resources over the internet. Which of the following are the benefits of cloud computing?

   I. Lower cost than internal development
   II. Frees company of internal IT staff requirements
   III. Regulation compliance
   IV. Faster access to application than via internal development

   A. I and II
   B. I, II and III
   C. I, II and IV
   D. II, III and IV

6. _____ helps companies to develop custom information systems for internal use.

   A. Packaged software producer
   B. Enterprise solution software
   C. Outsourcing practice
   D. IT services firm

7. Which of the following is **NOT** an open source software?

   A. Linux
   B. Adobe Photoshop
   C. Firefox
   D. MySQL

8. Which of the following are the reasons for importance of improved planning?

   I. Increasing cost of information systems.
   II. Many systems do not address the critical strategic problems.
   III. High system maintenance costs.
   IV. Data redundancy rate is high.

   A. I and II
   B. I, II and III
   C. II, III and IV
   D. All of the above.

Continued...

9. _____ is the method by which organization attempts to achieve its mission and objectives.

A. Competitive strategy
B. Incremental statement
C. Functional decomposition
D. Mission statement

10. Which of the following is **NOT** one of the classes of internet electronic commerce application?

A. Business-to-Enterprise
B. Business-to-Consumer
C. Business-to-Business
D. Business-to-Employee

11. _____ is the process of defining clear activities necessary to complete activities in a single project.

A. Project planning
B. Project initiation
C. Baseline
D. Business case

12. Which of the following statements are **TRUE** about Baseline Project Plan (BPP) report?

I. A major outcome and deliverable from the project initiation and planning.
II. BPP contains the best estimate of project scope, benefits, costs, risks and resource requirements.
III. BPP specifies detailed project activities for the next phase – analysis phase.
IV. The report is used by the project selection committee to decide whether the project should be accepted, redirected or canceled.

A. I and II
B. II and IV
C. II, III and IV
D. All of the above.

Continued...

13. All of the following are factors of assessing project feasibility **EXCEPT** _____.

A. technical
B. scope
C. scheduling
D. political

14. A new hardware purchase is classified as a(n) _____.

A. tangible benefit
B. intangible benefit
C. one-time cost
D. fixed cost

15. The most common style for a logical database model is the _____.

A. network database model
B. relational database model
C. hierachical database model
D. object-oriented database model

16. Assume the structure of a relation is *Manager (ManagerID, Name, Dept, Salary)*. The number of attributes for this relation would _____.

A. be three
B. be four
C. be five
D. vary depending upon the number of managers

17. A command-line interface requires _____.

A. inputs in the form of zeros and ones
B. Maybank usage of drop down lists
C. designing of icons
D. memorization of syntax rules

Continued...

18. Which of the following **BEST** describe about this type of testing?

"The process of bringing together all of the modules that a program comprises for testing purposes."

A. Unit testing
B. Integration testing
C. System testing
D. Stub testing

19. _____ is the process of moving from current information system to the new one.

A. Installation
B. Maintenance
C. Testing
D. Training

20. Which of the following is **NOT** the types of training methods to support the user?

A. Resident expert who conducts the training.
B. Traditional instructor-led classroom training.
C. E-learning or software help components.
D. Coding training.

[TOTAL 20 MARKS]

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SECTION B: TRUE/FALSE QUESTIONS (20 MARKS)

Answers for this section should be shaded on the OMR sheet provided.
Mark "A" for TRUE statement and "B" for FALSE statement.

21. Maintenance is a separate phase and not the repetition of the other life cycle phases to study and implement the needed changes.

22. Rational Unified Process has four phases of development: inception, elaboration, construction and transition.

23. The Agile Methodologies focus on the roles that people perform rather than placing the emphasis on individuals.

24. One of the reasons to outsource is to reduce process efficiencies.

25. Enterprise Resource Planning (ERP) systems integrate individual traditional business functions into modules enabling a single seamless transaction to cut across functional boundaries.

26. In-house development usually leads to less maintenance burden than other approaches.

27. After obtaining feedback from submitting Request For Quote (RFQ), analyst will select the best candidates based on vendor bids and a variety of information sources.

28. To benefit from a planning-based approach for identifying and selecting projects, an organization would just need to briefly analyze its information.

29. Objective statement is a statement that makes it clear what business a company is in.

30. In order to have a much broader perspective and to improve management support, IS project needs to be implemented with a top-down planning approach.

31. It is not a good practice to have system testing during holiday periods as it is affect the schedule feasibility of a project.

32. During project initiation, system analyst and a representative from customer's side will establish work standards and communication procedures.

33. Treasurer is one of the roles in walk-through meeting.

34. A Project Scope Statement can be used to serve as a contract.

Continued...

35. Normalization is the process of organizing data in a database where the end result will be a data model that is non redundant and easy to maintain.

36. The logical design of the database specifies the physical configuration on the storage media.

37. Designing usable forms and reports requires active interaction with end users.

38. The process of coding, testing and installation are some of the activities in implementation phase.

39. The process of documenting the system, training and supporting users are NOT the activities in implementation phase.

40. Two deliverable results from the coding process are user guides and user training plan.

[TOTAL 20 MARKS]

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SECTION C: STRUCTURED QUESTIONS (60 MARKS)

Answers for this section should be written in the Answer Booklet provided.

QUESTION 1 [20 MARKS]

a) In-house development and open source software are the options for an organization to acquire software for the business.

i. Compare the two sources. Provide **TWO (2)** differences. (4 marks)

ii. In your own opinion, which option is suitable for a start-up company to run the company? State your reason. (1 mark)

b) ***Table 1*** below represents an IS project set of activities, its expected completion time (in weeks) and preceding activities.

Activity	Preceding Activity	Time
A	-	3
B	A	7
C	A	5
D	B,C	12
E	C	10
F	C	8
G	D, E, F	6
H	G	10

Table 1

i. Draw a network diagram for the IS project shown in *Table 1*. (4 marks)

ii. For each activity, calculate its earliest completion time (T_E), latest completion time (T_L) and slack time. Label T_E and T_L on the network diagram. (8 marks)

iii. If activity F is delayed by 5 weeks, what impact will it have on the project duration? (2 marks)

iv. Identify the critical path for this IS project. (1 mark)

[TOTAL 20 MARKS]

Continued...

QUESTION 2 [20 MARKS]

a) There are a few evaluation criteria that can be used in order to identify and select IS development projects. List **FIVE (5)** evaluation criteria. (5 marks)

b) The following are the basic processes of *MyCalories* application.

- *User* may *enter the details of meals* that he/she took for the day and the system will *calculate* and show the calories intake to the user. The meals details and the calories are stored in *'Meals and Calories'* record.
- *User* may *enter his/her workout activities* and the application will *calculate the calories burned* based on the activities entered by the user. The application shows the calories burned for the day to the user. The workout details and the calories are stored in *'Workout activities'* record.
- Based on the record of calories intake and calories burned, MyCalories *tracks progress* of the user activities and displays the *progress report* to the user. The report can be weekly or monthly basis. The progress report is stored in separate record called '*Progress report'*.
- With this application, user *can add friends and accept friends* who are using the same application. The friends' info will be stored in *'My friends'* record.
- User may *make interaction* with his/her friends by 'like', give comment on the activity/meal posted by the user/friends. The details will be stored in *'My friends'* record.

Based on the scenario above:

i. Draw a Context Diagram for MyCalories application. (2 marks)

ii. Draw a Data Flow Diagram (level 0) for the application with general processes, data stores, date flows and sources/sinks. (13 marks)

[TOTAL 20 MARKS]

Continued...

QUESTION 3 [20 MARKS]

a) Below is the scenario of evaluating student's application for internship at Orion Growth Sdn. Bhd.:

- If the student's academic result is above average, the student will be interviewed
  - If the result of the interview is good, the student's application will be approved with financial aid.
  - If the result of the interview is rated fair, the student's application will be approved without financial aid.
  - However, if the end result of interview is poor, the student's application will be rejected.
- If the student's academic result is average and below, the student's participation in extra curriculum activities will be considered.
  - If the student is active, the student will be called for a personality test and interview. The end results of the personality test and interview will determine whether the student will be called for another round of interview. If the personality test and interview scores are more than 80%, his/her application will be approved without financial aid. If the student scores lower than that, his/her application will be rejected.
  - If the student is inactive, the application is rejected.

Prepare a ***Decision Tree*** to describe the scenario. (10 marks)

b) As a supervisor of a factory that produces microchips, Ali often have problems to use or understand the content of the online reports from his company's management information system. List **THREE (3)** possible usability problems with the reports. (3 marks)

c) Briefly explain when a natural language interaction would be most useful. (2 marks)

d) Installation and documentation are major tasks in implementation phase.

i. Direct installation is method of installation which the old system is turned off and the new system is turned on. Give **TWO (2)** reasons why this method is probably the riskiest. (3 marks)

ii. Explain briefly about system documentation and user documentation? (2 marks)

[TOTAL 20 MARKS]

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